

The National Geographic Magazine

AN ILLUSTRATED MONTHLY



BUTLER JOHN SEYDEL

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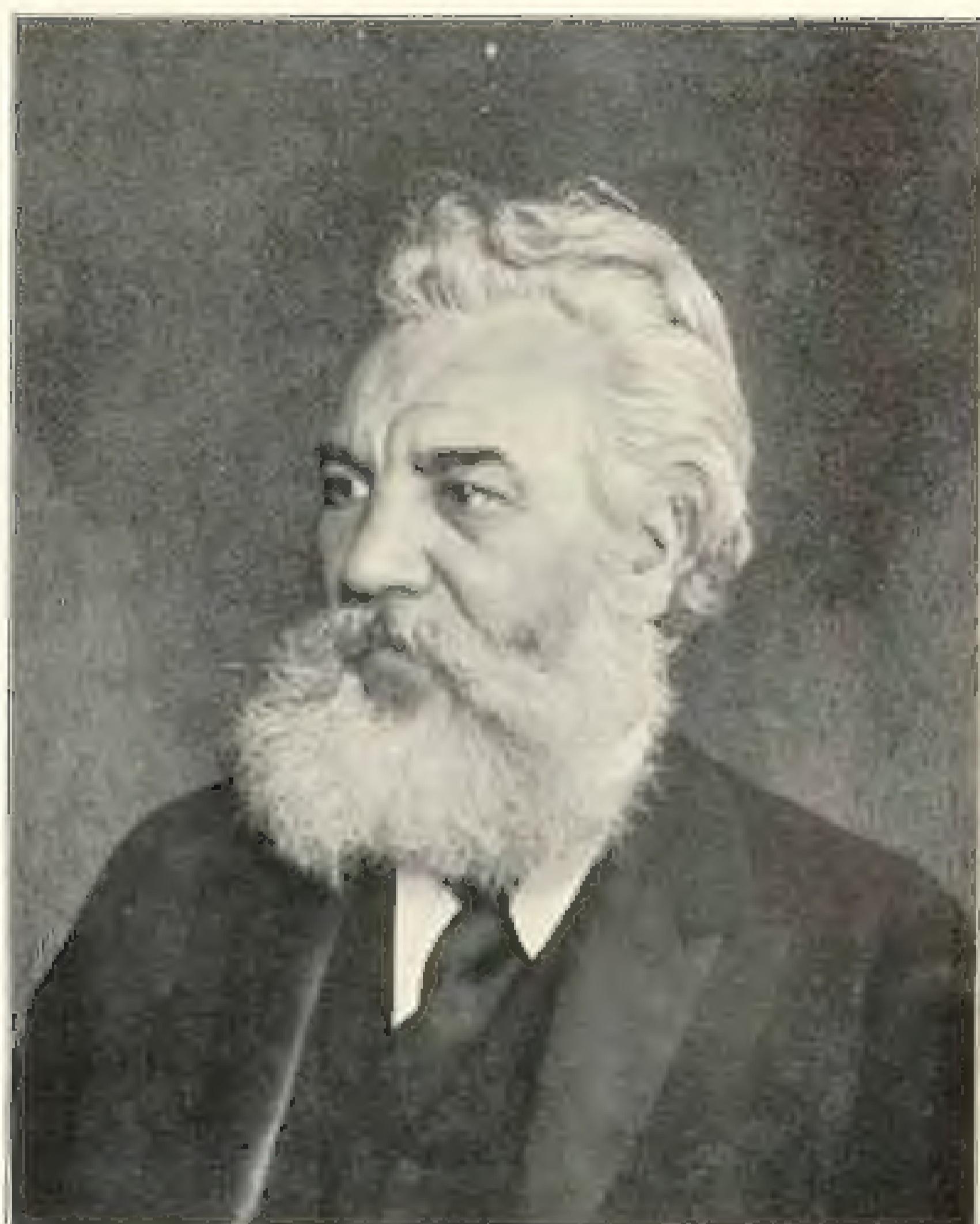
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Alexander Graham Bell

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DWELLINGS OF THE SAGA-TIME IN ICELAND,
GREENLAND, AND VINELAND

By CORNELIA HousTOn

The Saga-time began with the colonization of Iceland in 870 and lasted for about 150 years. During this time the oft-repeated accounts of the discovery, colonization, and early history of Iceland, as well as that of all Scandinavia, required the form of *Saga* or narrative. Ari Thorgilsson, the historian, who was born in Iceland in 1067 and died in 1118, was the first to write down these events in chronological order. In each of the four books attributed to this writer Greenland and Vineland are briefly mentioned.* Other Sagas relate the adventures, tragedies, and family histories of the colonists, and among these are the Sagas which tell about Greenland and Vineland.

We know that Scandinavia has been a rich field for collecting relics of the stone, bronze, and early iron ages, but no ruin of a dwelling dating from the Saga-time has yet been identified in Denmark, Sweden, or Norway. This may be due to the lack of durability in the way of building the houses and to the custom of using over and over again in new buildings all the suitable material from the old walls.

In 1888 a young Icelander named Valþr Guðmundsson, who was studying for the degree of Doctor of Philosophy at the Uni-

* *Icelandic Sagas, Landnámabók, Heimskringla, and Konungsóldur.*

† *Hauksbók, Eyrbyggja-Saga, and Flateyjarsaga.* *Grimskáld* and *Kormáll* are also briefly mentioned in the *Fornmanna-Saga*, *Kyrtseygja-Saga*, and in other works incorporated in the *Ars-Myndir* Library at Copenhagen. An account of these will be found in the first chapter of "The Finding of Vinland the Good," by Arthur Meehan, in *Illustrated London News*, Henry Frowde.

university of Copenhagen, chose for the subject of his thesis "Private Dwellings in Iceland in the Saga-time."⁶ In preparing for this he read every saga of his native literature, comparing each description, sentence, and word relating to his subject, until in imagination he had reconstructed every form of dwelling and outhouse of the Saga-days. These buildings differed considerably from the design given by Flóði in his edition of Snorri Sturluson's *Saga*, printed in 1715, which was the accepted model until the publication of Dr Gudmundsson's work.

In 1894 Lieutenant Daniel Bratt, of the Danish navy, was sent by the Danish government to make extended researches among the Norse ruins in Greenland. These researches went far toward confirming the results of Dr Gudmundsson's studies.

It was therefore with much gratification that Dr Gudmundsson (who was by that time professor of Old Norse literature and history at the University of Copenhagen) accepted my communication to direct archaeological researches for me among the ruined dwellings and other works of man in Iceland during the summer season of 1895.⁷ He took with him from Copenhagen another Icelander named Thorstein Erlingsson, and to him the greater part of the work is to be accredited, for Dr Gudmundsson was in attendance at the Icelandic Parliament and could not be present in the field himself.

ICELAND

The Icelandic Antiquarian Society has done some good work in the field. They have identified and roughly measured the ruins of many historical farms and of several hundred booths at some of the old open-air law courts called "things." One or two pagan temples have been dug out and carefully described, and many burial mounds, which also belonged to the pagan days. The ancient dwellings were situated on sloping ground, near rivers or fjords.

From the early days this has been believed to be the ruin of the house built by Erik the Red in the Hawk River valley soon after his marriage with Thorkild, and here his eldest son Leif was probably born. Erik lived in four different places in Ico-

⁶ "Hverfisbókin um Íslenski Þingum" af Vilhjálmur Gudmundsson. Copenhagen, 1888, under Fred. Hause & Sonn, Berlin.

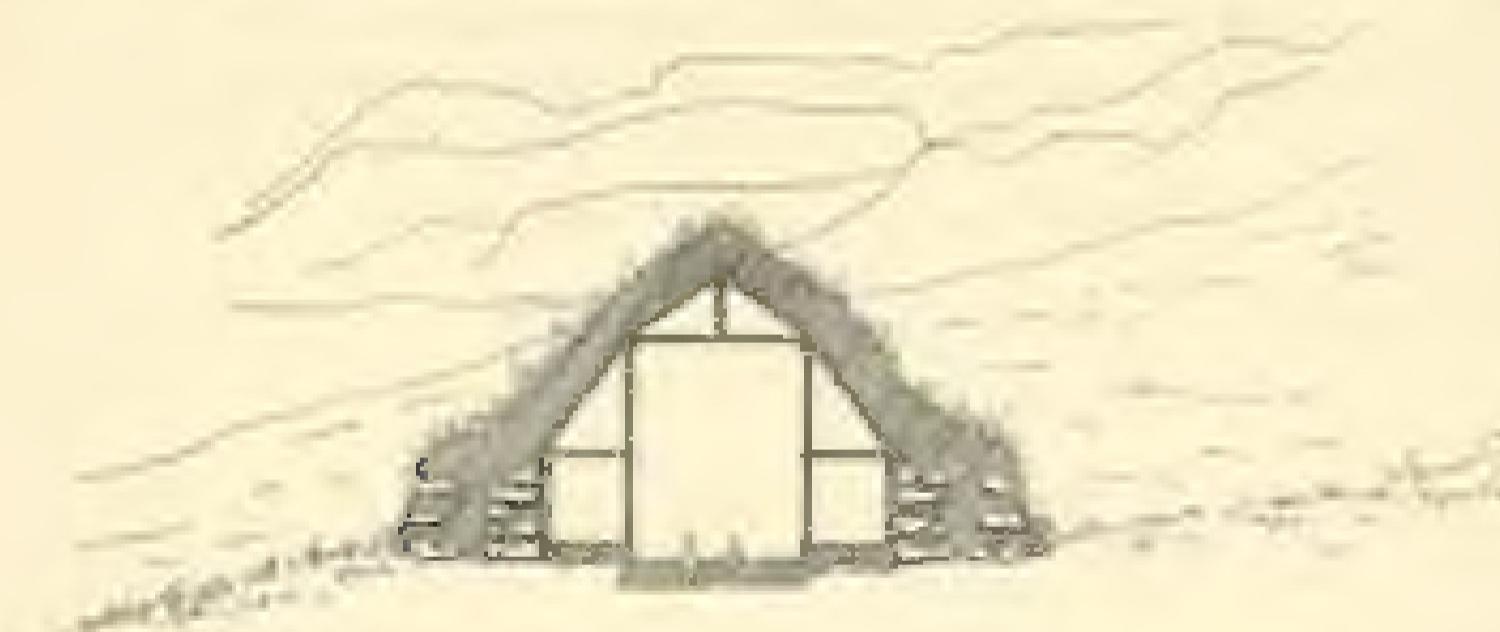
⁷ The report of this expedition will soon be published by the Viking Club of London under the title of "Ruins of the Saga-Time."

[The transcripts of this article are published yearly at Reykjavik, Iceland, in the "Íslensk Ínsíða Fornleifafélagsskriftar."]



SCATTERED RUINS OF OLD DWELLINGS

but before he finally settled in Greenland. The supposed ruins of his houses on Oxney and Sydrey can still be seen also,⁸ but I do not know that any ruins have been identified at Dranger. The ruins of these dwellings, when undisturbed, are low, grass-grown ridges and hollows often difficult to detect, except when stones protrude through the turf. A dwelling usually consisted



ARTIFICIAL SECTION OF A HLD

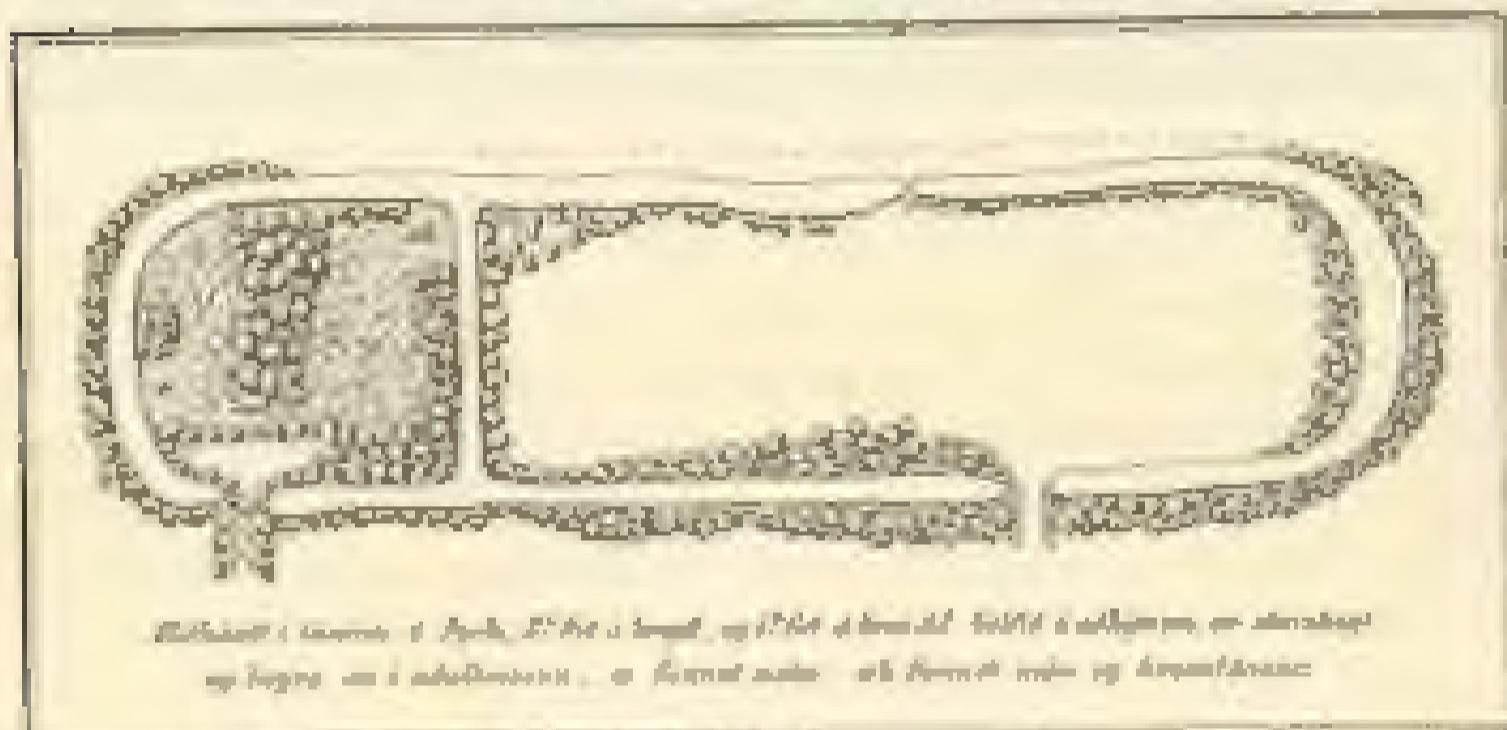
of three apartments: a hall or principal room, in which there was always a fireplace; a sitting room for the women, and a store room or pantry.⁹ These apartments were like small houses,

⁸ "Trailing of Vineland the Good," by A. M. Harmer, p. 10.

⁹ "Forstadsbygning Nordiske og Islandskes gamle huse" af David Lunde. Copenhagen, Knud Dreyer, p. 16.

each with a separate roof, but attached to each other, with passages through the thick walls. Near by were usually one or more small outhouses. These dwellings were built on the surface of the ground, which was probably levelled when necessary. The floor was of firmly beaten earth.

The walls were one and a half meters thick and from one to one and a half meters high. The inner side was built of unhewn stones and the interstices were filled with earth. The outer side was of alternate layers of turf and stones, and the space between the two sides was filled in with earth kneaded hard. When these walls fall, the stones necessarily slip down on either side, and the bottom row with the space between remains almost intact, unless



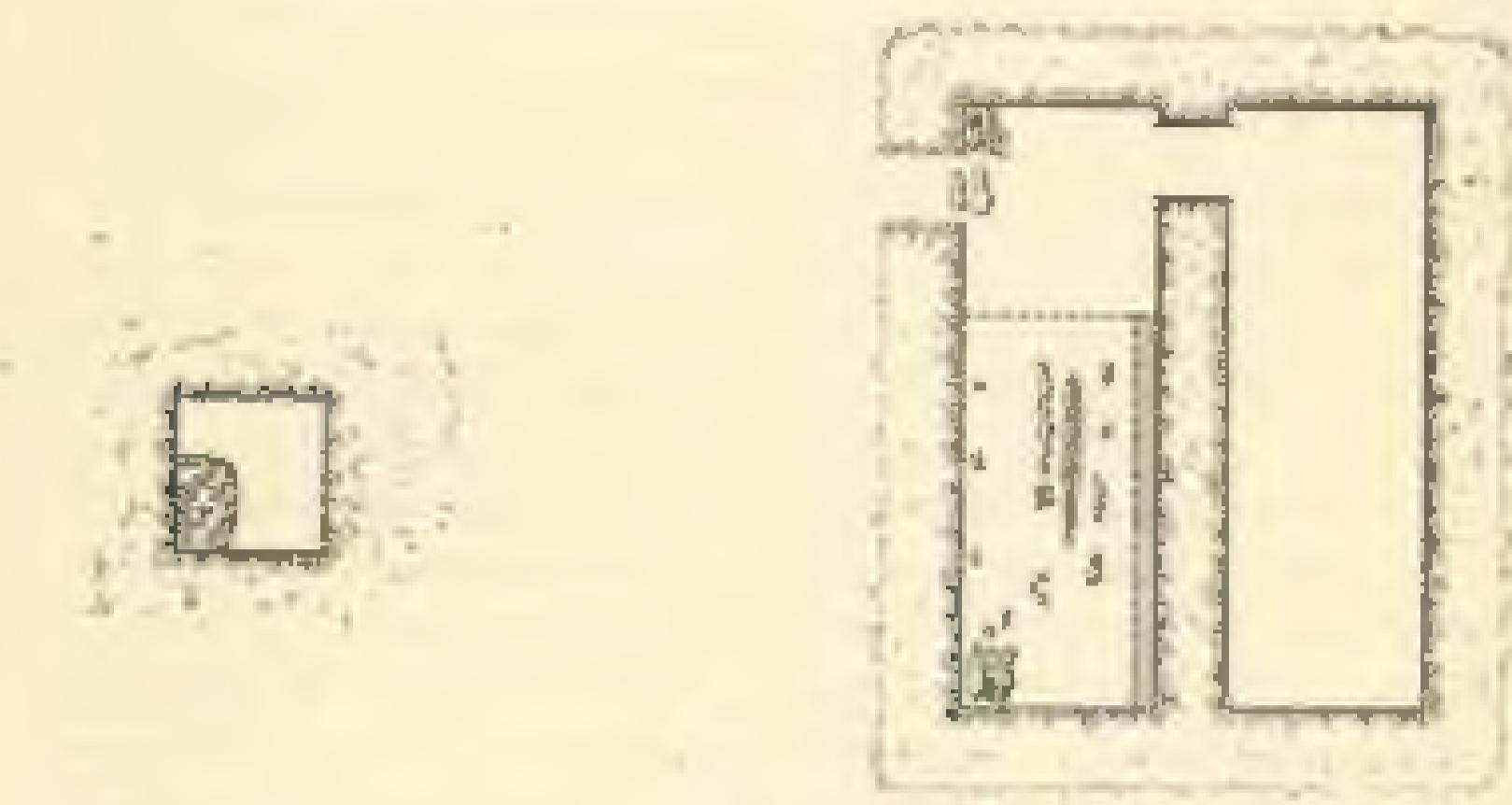
RECONSTRUCTION OF A LONGHOUSE

ERNST HEDVIG, DRAWN BY HEDVIG.

unnecessarily disturbed. Often, however, the walls were built entirely of layers of turf or with only disconnected rows of stones at the base.

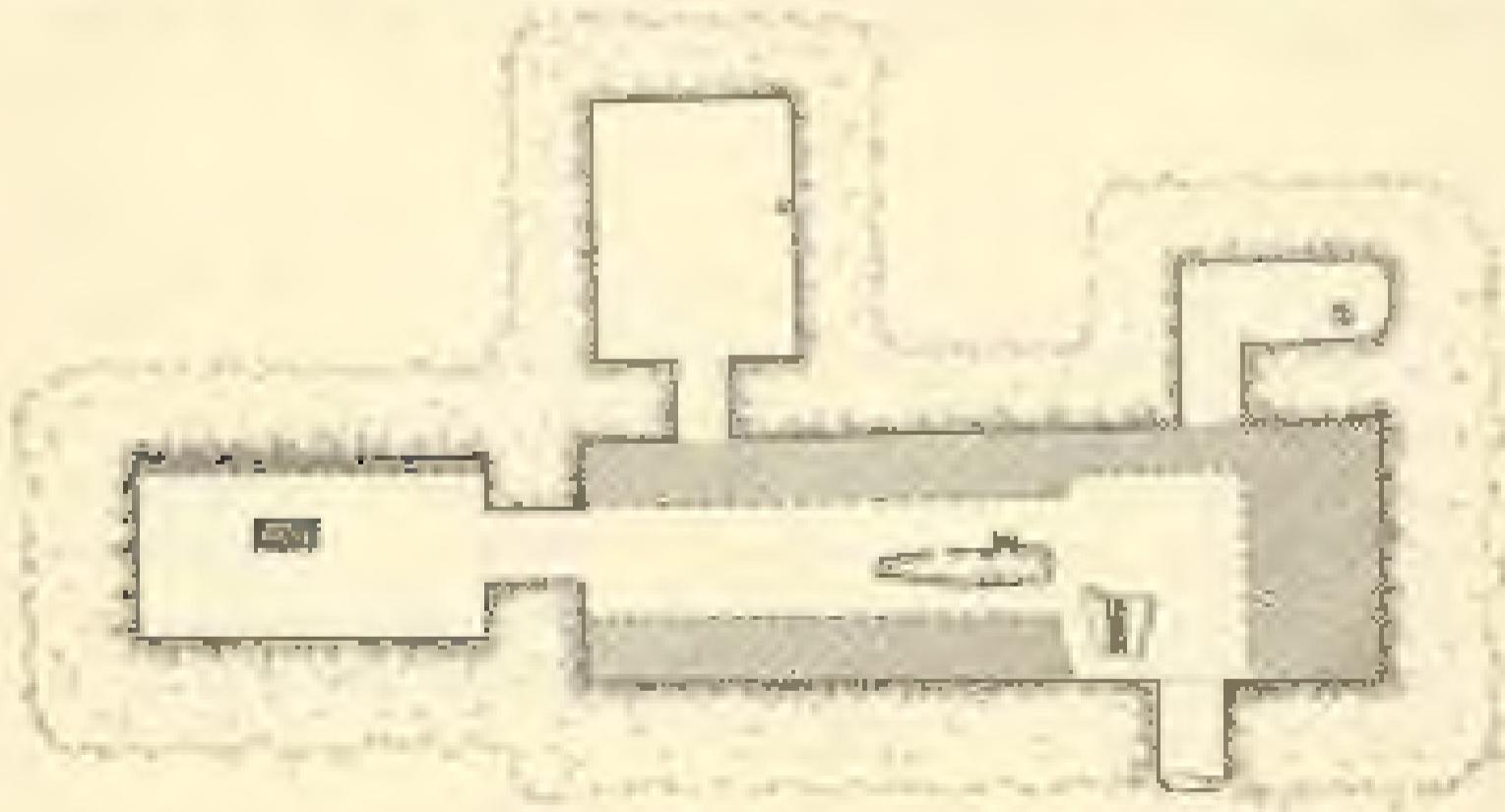
The drawing of the pagan temple at Thykk shows the manner of laying the inner and outer sides of a wall with the earth between the two. A large stone, of course, extends farther back into this earth between than a small one does.

The inside measurement of a hall varied from 5 to 7 meters in width and from 10 to 17 meters in length. The plan is of the ruin of Erik the Red's house, shown above from a photograph. A long narrow fire-place usually extended through the middle of the room. This was either paved or surrounded with stones standing on edge, and was about 3 meters long and from 60 to 80 centimeters broad. Besides the long fire which served to warm and light the hall, there was a small cooking fire made in the same way, about 1 meter square and raised a few centimeters



PLAN OF THE HOUSE OF THE KING OF NORWAY

above the level of the floor. & Other non-essential forms of fireplace I need not describe here. A separate apartment was often formed by erecting a thin partition across a room, as is shown in this plan by the dotted line. Pavements, but more often thresholds made of one or more long stone slabs, were sometimes in the doorways and also in the passages through the thick walls between the apartments. The outhouse shown at the



PLAN OF A RESIDENCE IN ICELAND

left was about 13 meters from the door of the house, on the steep mountain side. It was 4 meters square, built of turf only, and partially underground. There was a large square platform of stones in one corner which had served for a fire-place.

Narrow platforms of earth stood along the outer edge with upright stones, on which the inhabitants both sat and slept, extended along one or both sides of the hall. In the larger halls these platforms were about 23 centimeters high and 11 meters broad. Sometimes there was also a broader platform at one end of the hall. Skansstadir is one of the farmsteads in the Thor's River valley which was buried during an eruption of Mount Hecla in the fourteenth century. This valley is called the Pompei of Iceland. The farm was probably abandoned about 1700. It shows the best changes in the evolution toward thicker walls.

With the exception of some spinning-stones, which were found in the sitting-room of a house not shown here, no relics were found during these researches. It is also an interesting fact that no runic inscription belonging to the Saga-time or for two centuries later has yet been found in Iceland.

The evolution which has taken place in house-building since the Saga-time has been in the steady increase in the thickness of the walls until their breadth is nearly doubled, a slight increase in height, not admitting a second story under the roof, and the addition of many apartments, so that from a distance the many roofs of a farmstead look almost like a little village.

GREENLAND

Greenland was discovered and colonized by Erik Thorvaldsson toward the end of the tenth century, and from that time two Norse colonies, called respectively the eastern and the western settlements, prospered for about three hundred years. The ruins of these two settlements have been studied with more or less care by the Danish government. In the eastern settlement a hundred and fifty farms, with all their outbuildings, have been surveyed and measured. A few dwelling-houses have been thoroughly dug out and examined.*

* Description of History of Iceland and Greenland (1881) 1, 1881, p. 12; F. Hahn - Medieval History and Organization, division of Greenland and the Landebau of the geologists on geographical Under-survey (1882). Copenhagen, 1882, pp. 51.

Classification of Greenland Archaeology (pp. 10-11) by Prof. N. B. M. J. A. D. Hansen, 1882, pp. 10-11. Manuscript not found.

Archaeological Under-survey (1882) under direction of Daniel Bruun, 1882. Manuscript not found. Copenhagen, 1882, pp. 10-11.

As in India, these fortresses were situated on the shores of rivers and lakes. About 6000 such fortifications have been found, one in impression at once with walls striking differences. Even the unfortified houses suggest narrow, suffocating and cramped walls.

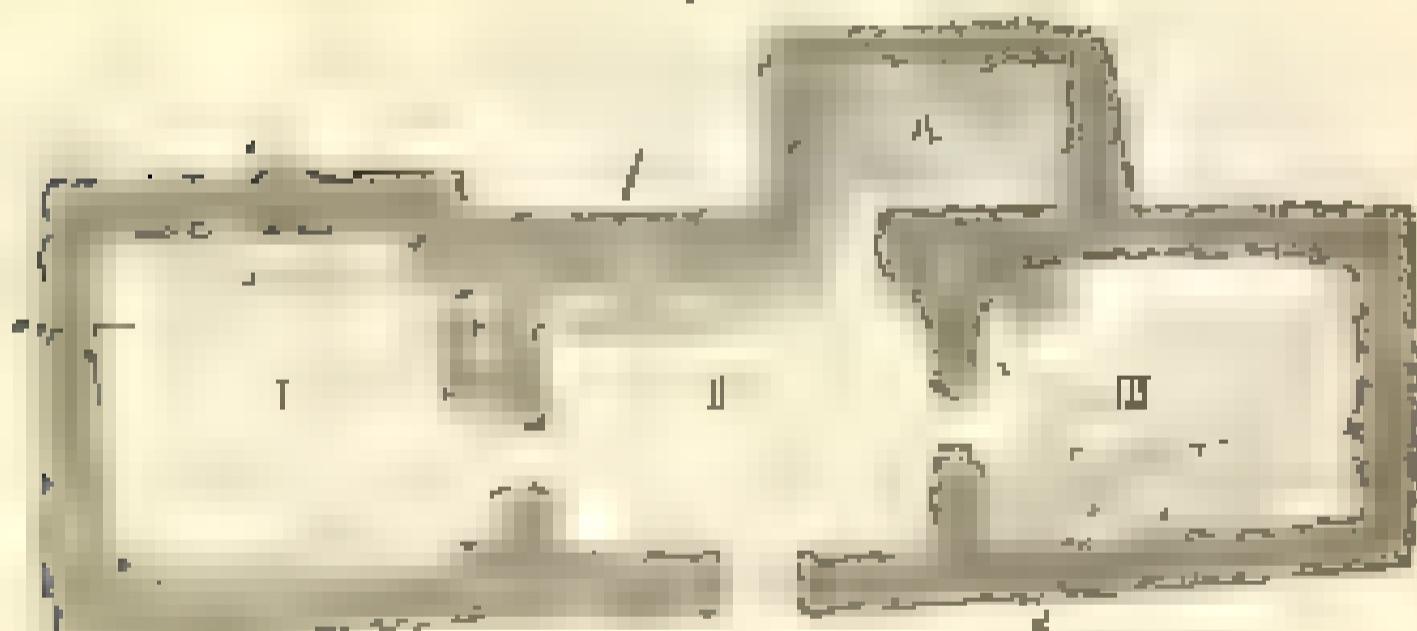
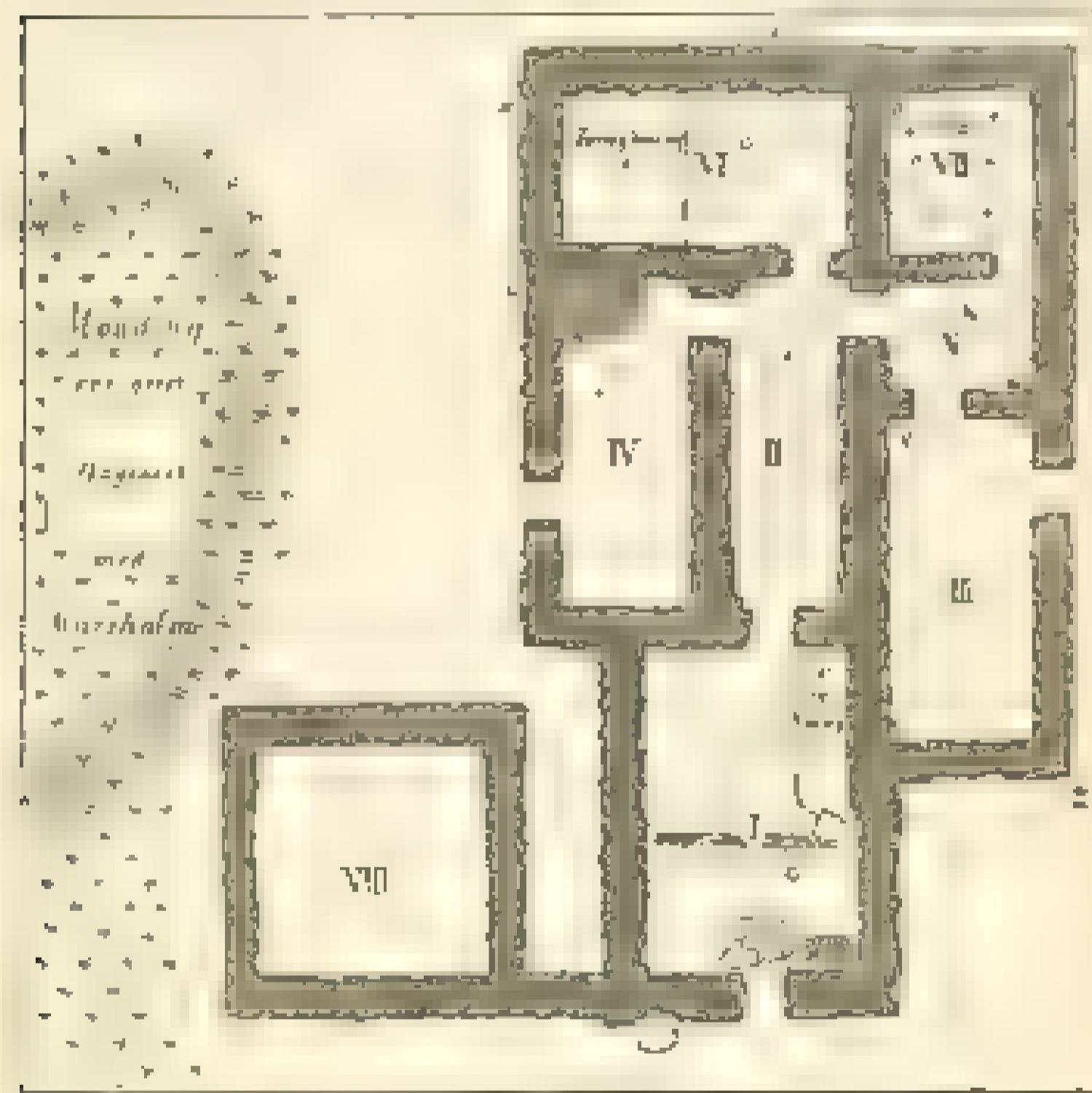


Fig. 22.

The dwellings were usually long and narrow, consisting of from 1 to 8 rooms, and were surrounded by numerous outer courts (stables for cattle, sheep, etc., ports. Other than the houses there were numerous smaller huts, from larger than a

regions of the plateau. In the west, the walls were however built of stones of the limestone and sandstone, & though they were built of layers of earth and stone or sometimes of turf on a foundation of stones, they had a dry space, filled in with earth, having almost always a fireplace. It may be seen in the sketch. The top of the m. s. is at the altitude of 4000 ft. above the prairie, through which small streams (firerivers) flow, all of which I left in early

In 1261 three hundred men were sent by the Crown of Norway
to the court of King Edward I.



Twenty percent of the women in India and Brazil and
with only 4% not doing the housework. Perhaps the Indian and
Brazilian women are more efficient. The ratio of time spent
in the kitchen and eating of Brazil is 1.2 to a ratio of 1.9 to 1.0 in
India. I am not sure if this is significant or not.

Augments to which have been found in the two sagas the following, pieces of stone vessels, &c., will also be found with the Sagas, all of them characters. These, like all the others in these sagas, belong to a period later than the Sagas themselves.

VASES.

Two vases, found where one had every reason to hope to find flowers, did not differ in their composition from those of silver in the Sagas themselves. The materials were similar. The corresponding German forms are:

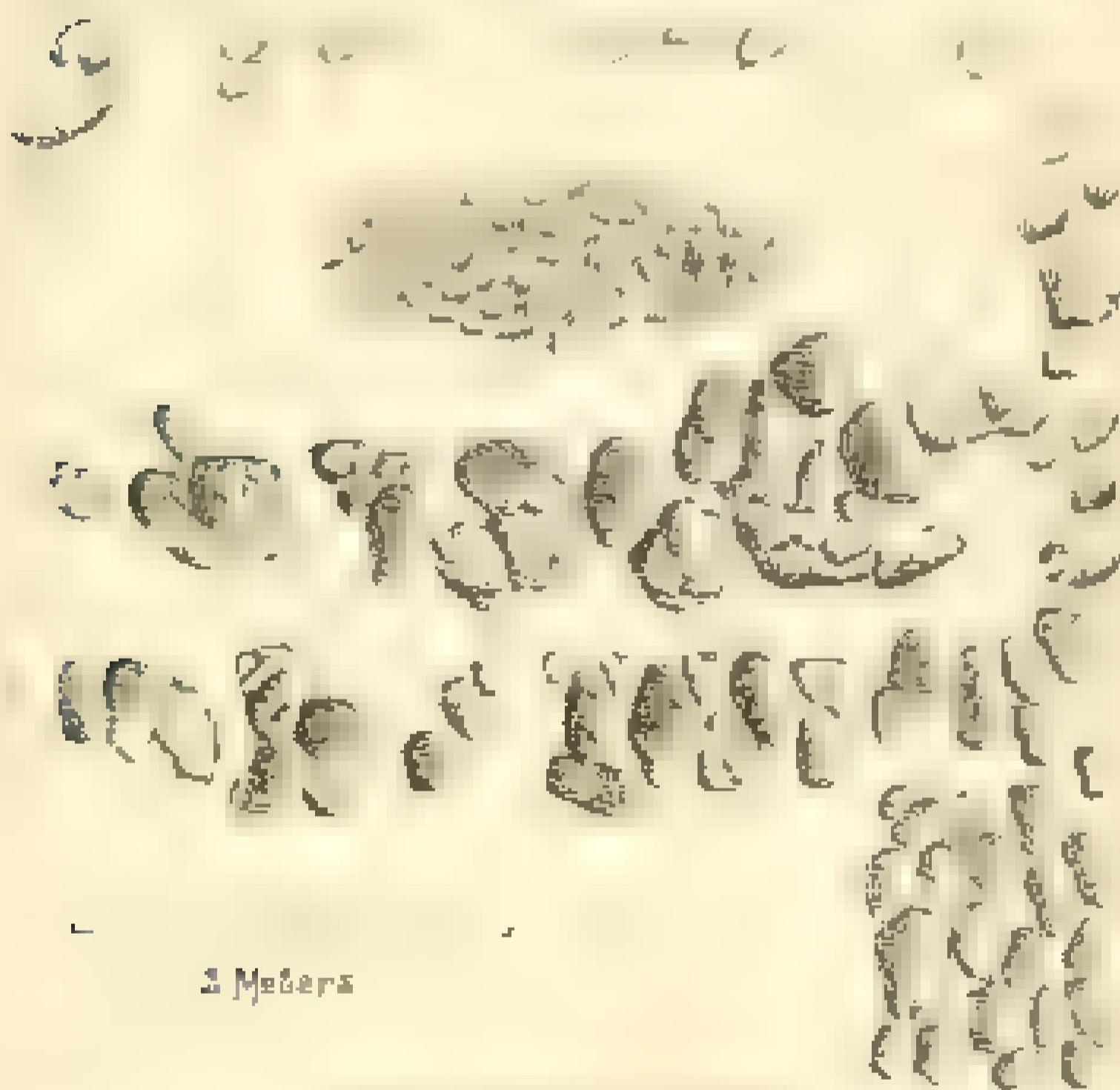


The walls of the last have had no little noise [been expended]. They were probably built up entirely of tort, and they looked as if they might have been made by many workmen. I sought for its fireplaces. Three or four fireplaces were on the site, one of them being the familiar kind in a niche, with the usually flat saucer-shaped earth, covered with ashes and unburned charcoal, but this remarkable fireplace had never been eaten through by the flames. However, this was very different from the others, and of the usual sort, with a chimney as high as the steps at the four corners on a base of charred and broken stones of lime. This is the case of it now in the place mentioned.

COLLECTOR OF REVENGE

the group of houses built in the party of Thorleifur Karmast
Vigfusson.

The second house I followed for the protection of all the way on
the stone pavement, here I alighted at the door, who I perceived that
in the temple at Thydich over him. Then a series of low
chambers or by other saying foyers, the rooms, according to the con-
tinue, containing more and larger stones some of which were of
large size.



and I passed by a firehouse, but saw well no trace of such one
was to be seen, black streaky rocks between and the rest of the road
I have since been do may never have seen above four feet thick.
This however, with the other two is about 6 inches with ten or twelve
inches from a re-surfacing, and a thickness of about 12 or 15 ft.
but it must be added about 10 large fragments from the
these told about in the Víðar and Þorlák.

No names have been found, either of those who went I am
lost to the Norwegian. I have, however, one stone inscribed

which was first succeeded by the yellow and green
leaves of the first growth of the New wood and grass,
my last goal to the ravages they could bear.

It is with the loss of the entire body of North American
from the agricultural parts of Canada to the Rio, among hundreds
of thousands, and will consist in a majority and diversity
between these wild and tame of the other species, because

The species of *Phytolacca*, *Pterosperma*, and *Bongardia* extend to Australia and roughly have both limits in those countries, but in Europe the range of that type has found a haven of favour in, namely, in the steppes, and although parts of North America are probably

they have it I will soon bring it to the water. I am very sorry.

For scattered examples of architecture on our shores, we will only
the present knowledge of the evolution of the popular architecture,
as far as I have been able to find out, so that it is when of the
informer houses at New-England can truly be said to be houses of
the 17th century. The oldest French house is the 17th century residence
of M. Quebec, built by the Jesuits in 1647. The walls of this
house were built of stone, and were eleven feet thick, and its mortar
which is now only as hard as the stone itself. I have seen

Topic I have found something in Knobels work which is very familiar

different types of development, and also, its growth.

I am glad to have an opportunity to express publicly my appreciation for your keeping me posted to the All India Conference, and here again I thank you. I have come to our library to do my researches and taught me in the field the knowledge they can only be had by their own experience. We must work. I could have written a book to gather many facts about which I have been interested.

Mr. Johnson's book is Seven Weeks of Old Work and Death. It is the new
Two weeks of Hell book by him, Pennsylvania West Virginian West Virginia
West. West. Seven weeks of old work and death.

Top Feature Stories Two days to mid-term Christmas, TUES.

Mr. David Hunter, the author of the famous *Journal of Mormonism*, has recently published a large collection of historical documents titled *The Book of Mormon, the First Folio*. The book is scheduled to be released in October 2010.

The second method is to utilize several hot and cold sources which serve two purposes. One

COMPLETION OF THE LA BOCA DOCK

There, Mr. Johnson of the London Club, found me I was work in
110 feet water in Orkney, and Shetland, and
two weeks in Firth of Forth.

Mr. Alfred H. Thompson, Professor of Old Norse History and Lan-

guage at the University, 1885. Five weeks in and near Cambridge, 1886.

Mr. T. G. Stebbins, Anthropologist, Peabody Museum at Harvard 1886

and Pequod sailing in Maine, 1886.

Mr. James Jackson, Past President of the Royal Society of Canada. Ex-
ecution of researches near Quebec, 1886.

Mr. C. G. Wall, Curator Peabody Museum, Cambridge. Two days on Cape

Horn, 1886. Adviser critic, and encouragement, both in Whales
Canadensis for over four years.

4

COMPLETION OF THE LA BOCA DOCK

stated. The tide fluctuation at Paraná amounts to over 25
feet, and more from the shore. As to whether or not you will
venture to use the La Boca dock, time alone will prove. Mr.
M.

During all, and could get no distinct and positive. The
lava is mostly level, the highest point being little over 100 feet
above the sea. The distance is about 45 miles. The frequency

of the river changes south to the only difficulty, and it appears
no boat provision for the storage or removal of such would
be made. The work, if it were in American hands and completed

a few years at moderate cost. About one-half of the work—14
miles at the first end and 8 miles at the south—had been

never have caused great damage during years of neglect.

TWO HUNDRED MILES UP THE KUSKOKWIM

By CHARLES STANTON

The Kuskokwim is a river which flows from the Yukon River about two hundred miles above its mouth. It is a large river, and its waters are rapid, especially at the falls which are situated on the upper part of the river. The water is very cold, and it is difficult to swim in it. The river is about one mile wide at its mouth, and it is navigable for small boats. The river is fed by several tributaries, and it is a great source of water for the Indians who live along its banks. The river is also used for fishing, and it is a popular place for Indians to fish. The river is a great source of water for the Indians who live along its banks. The river is also used for fishing, and it is a popular place for Indians to fish.



which continues to follow, its meanders flowing seaward. Very different is the general aspect when it is broken by falls. "It is wider than I like to stand upon the side with my feet in the water." The head of the falls is 100' in its upstream, at the point marked Marigold Lagoon. At this point there is a narrow outlet west for the falls, where flow is intense. In other places power for it runs vertically over great boulders about, filling up the wash channel which forms its bed in the broad space of six hours, though there is no entire absence of anything but a flat "to" to bring in all, overwhelming everything in the impetuous current. This phenomenon occurs at an old falls which I used to see current reports say to have of the Bay of Fundy, could pass its uppermost cataract, and a graphic picture was told of falls which had been formed by a tidal or flake, sudden, strong, submerging wave and bringing present of vegetation and earth bed.

On the King's River there are no less than sixteen trading posts and villages within the first 30 miles of us to catch. Messrs Hartmann and McLean of St. John, & their agents from Fredericton, Peary Station, who are men of marked ability, created a

map, and the description of each river which were follows, given

from an observational trip. They afford a very realistic picture of country, & in the interior of Acadia will serve to no small purpose.

We had the good fortune to first arrive at the mouth of the river in June, the salmon fishing was on its height, varying with the river, from the following account on the St. Lawrence (which we

wrote) of Esek Ulus, whose runs were strong along the L., of a narrow lake but freshwater above the river, but only for twelve crowding out, & so closely that there was barely room for a boat. This is what was frequent without exception, one, two, and three

or more called in the southern states, the country is a flat valley, con-

sidered from the above being too plain and afford fuel for the residents, indeed, who often get around the banks, but whence no trees



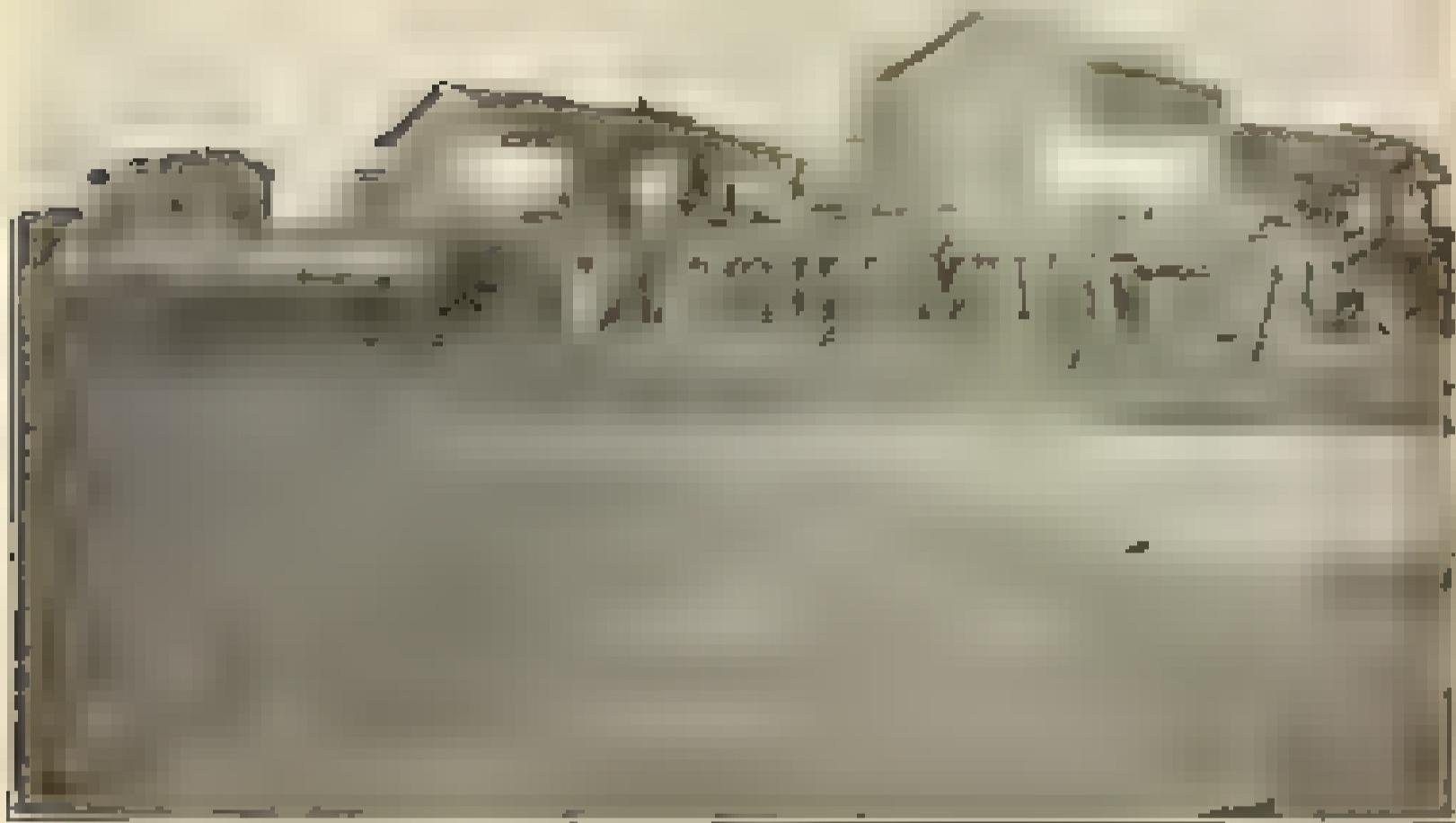
a boat of perhaps seven or eight thousand. There is a party of sixty men, a score of women to the Kusk Indians, whom he had sent for a voluntary company of the Iagash. But with party and his crewmen, these men are taken off at an expense of some two hundred. The caravaneers measured a specimen which weighed 41 pounds and I preferred three feet in girth and seventeen or twenty feet in length.

The portage which is the greatest obstacle on the long corridor for so enormous a load is from a high snow-covered mountain range which traverse the interior and are consequently filled with snow drifts, but which are found in it and around its edges where the snow has been melted by the sun's heat. But the drifts are in patches.

First — the baidar in which they had taken passage from San Fransisco — the mouth of the river landings above, the nose having been pulled up the stem to be accompanied with four long barges destined for upper ports. "I" cut away just above nose so that were not so much bulk, or sea room, as above a hundred yards with three main cables, the messenger passing through the central hole in the pack and the end cable. A three hours sail brought them

to about 4000 feet above sea level I started northward
by a trail, up river at 4 a. m. at night or 5 a. m.
daylight. The weather was clear, but wind and clouds changed their
form the next few days. Starting on June 18, at 2 a. m., just be-
fore daybreak, they made an eight-hour pull to a village of about
ten huts made of native pinons, and adobe houses with roofs
of palm leaves. These houses were built lying on the ground, without
attention to drainage, where I stressed by repeated inspection the
fact that there could be found Lepidoptera of the type of Apophytes, and a great number of tributaries, located in
them. The country of the Keres Indians, where many nests of these
lepidoptera were lying on the bank waiting to be processed. All
the pinon woods present in successive order and were broken in
every direction. Lying by little brooks starting down at
a fork of the main stream were waiting for the time to come—
they arrived at Capitan around 10 a. m. and filling bags and making
a pile out to lay out along the south bank of the creek. Travelling
was delayed. A man rode back to report me off. Then I
left for Capitan and I found the town crowded
up hill with all sorts of Indians the
power, so that I had to stop.





THE road to Gandy had been an unbroken one, with no inter-
val of time between it and the rainy plantation. The slaves
were used with a heavy hand, and it was
in all probability a day or two's delay of robbery by a
rude wayman.

The next day we took the train — following wooden beams
the road. A dark, silent, dead world lay before us, were
there known — like a tomb with a thin cold light from
the north with gill trees. Soon they passed Napier sign on a post
and entered in view — two spires that fringed the station of New York. Then came a long bank with a back-
ground of tall trees and a ridge in the distance. The telegraph poles about a foot. The station covered two acres, were
with long houses and several smaller ones, and a basement with
a door or platform, besides a central entrance of not much height —
plete the ordinary stock for higher wages, as they now-a-days
but were flung & scattered by the favor of the passing wind.

The dogs here were numberless and however, so used to their work
—

lock him. The couple seemed to be a wrestling match for
one to win for the permanent possession of a woman. "It is

string of villages presented at a distance a dark line where the fields and water spaces from forty feet apart and the sky reached black against the white snow which covered the ground. On one of which I began to explore the villages. The village contained about two hundred houses and was situated in a wide valley between two hills about three thousand feet high. The village of Simeonovka opens a wide view over the fields, and in other directions there were prospects to the village of Strelka.

At half past four we were all aboard ship and the following day further east at 10 o'clock started our steamer for the village of Simeonovka. In our boat Brown Father took care of

the boat left Ushakovo on the 11th of May 1866.
The river, a sort of bay—Ushak, Kalkan-gombe. (This name also—was proposed), a number of islands and
islets. The steamer which had not met a boat before it left,
the great food trade center of the country is Ushakovsky, where
most of the horses of the Cossacks were sent to the
provinces. We had to wait till the third week in June for the steamer
to go there were 10 days.

The boat goes with the steamer—after proceeding
and a long roundabout track, last but one—200. It is a road



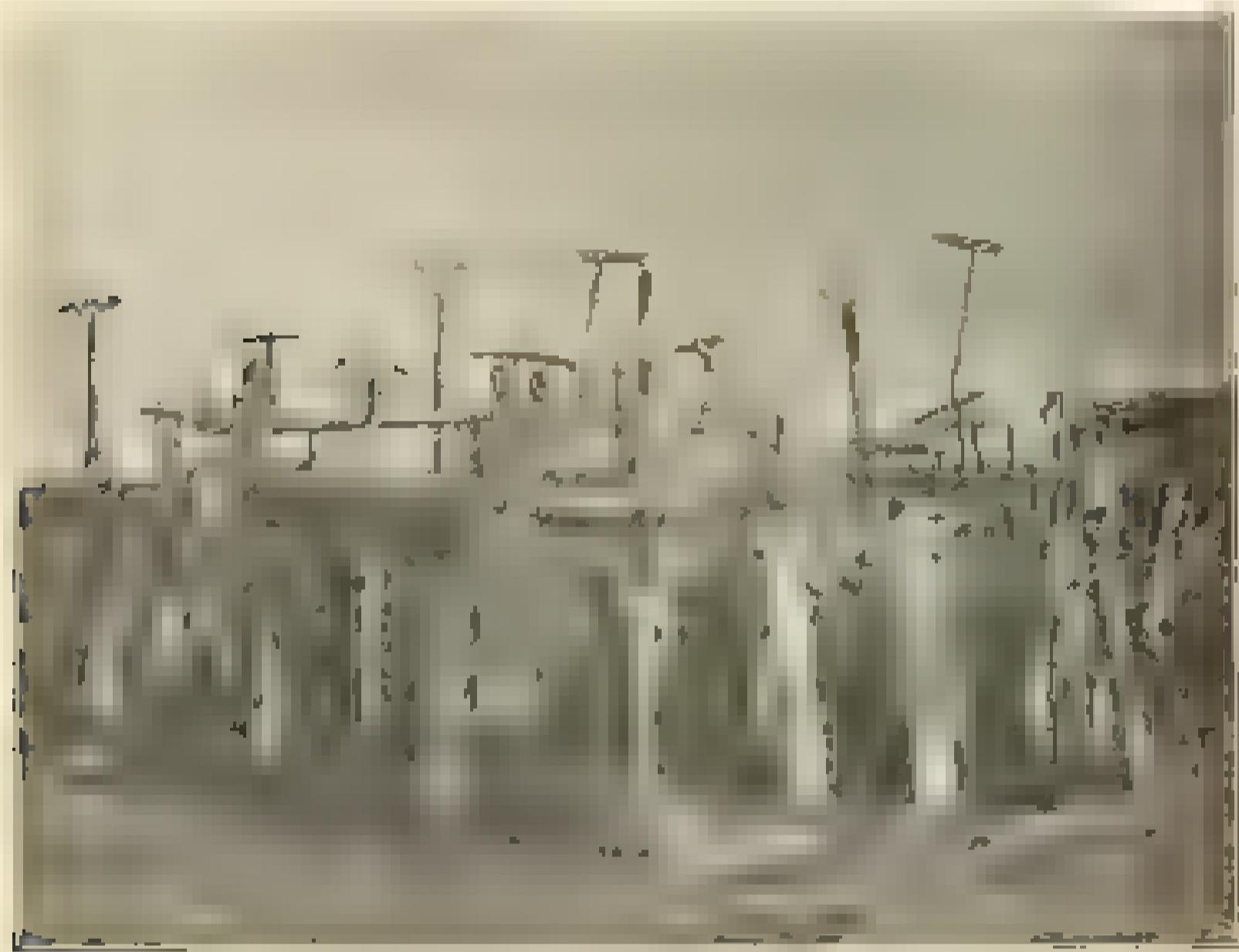
a boat. The road by him is the same as follows: At Alasko we first encounter the village. At the village there is a small house with half a dozen native women as partners who have very generous means of support. They all live in houses very comfortable and neat up. These old women are a great help to a passenger, because they are always at hand to the boats of tourists to assist them. There are some fish traps at Nusunuk a village 10 miles above up the stream.

At Nusunuk we strike up the river. The houses retreat back along the bank, so that we are soon in the mouth of the Kaskeah in two days' time, while I project my tent in occupied twenty-one. The weather for the previous fortnight had been perfectly dry, but not for over a week. The country has seen a lot the year past, so owing to the abundance of Great Horned Owls, a large

ring of traps set the narrow entrance off the side of an otherwise tame, came to anchor at one bend of the bay in front of a village of 150 people (twice its size last year), and a scene of great consternation. By taking a canoe and a rifle from those across the neck of a mountainous headland I obtained a good position, their place of destination at Togiak Bay, and I avoided a period of a dangerous journey outside, as I was going upon a winding tributary creek, crowded with a noisy multitude, with high grass and brush, so that they came to a portage, at all, passing through deep, silent, gloomy woods which seemed to be the borders of the atmosphere with they have to ascend. The lakes, of which there are four, are small, though the largest scarcely a mile in length, with white trout fat, fresh and sweet, and full of "red salmon," some of which the natives gather up.

This fish is the only salmon in the river, or Chukchi Sea. The characteristic of these fish is "to lay swallows on the back close together." One may also be termed as the pollock of Alaska, and by C. G. to the Bear Islands. The flavor was not highly esteemed. I was glad of the chance of getting off the river followed westward, first an arm and then back again to the scarcely passable, but a soon to be left behind. A winding river comes down, above or below some hills now, and a winding turn comes around, above or below some more, so that the water goes the water with a great deal of difficulty. The Indians have little to do except to let out pun-

and keep her off the bus because he was. The country had very
few if any trees but had on all the roadside by well sheltered in
the groves which sprang up, rising from the prairie soil, with
low shrubs growing on certain patches. The prairie was one vast
as to over which deer and birds had the right away. On
the river bank there at the corner of village of
Agua Caliente I often made my way in a short time and
three days in those infected villages "had not
a single accident."



Following, after the manner of Indian traps,
which consist of two or three logs of wood with
a broader front part fitted round the A
part of the bottom, thirty yards apart, so as to
hold each another, I put the end of a log between, two ends of broad
evidently was enough but a sort of float called that, too long
and not strong enough to hold the end of a log
so the boat will turn.

THE MT ST ELIAS EXPEDITION OF PRINCE L. G. AMADEO OF SAVOY, 1867

A lecture of Mr F. J. Gould, who accompanied Prince Louis of Savoy on his expedition to Mt St Elias, was delivered before the San Fran Alpine Club and has been published in the San Fran Mountain Club Jly. It was the first lecture on the subject given and a most interesting account of one of the greatest of our peaks of the world. A translation of an article appeared in the latest Sierra Club Bulletin, January, 1868, by Mr Paul de Heer, of San Francisco, member of the Sierra Club, the author of "A guide to the mountains of Northern California" is preparing one on the Pacific coast.

Mr F. J. Gould tells how Prince Louis did manage to make the ascent in a party, 1867, at all were long entrapped upon the snow drifts of the latter. Since this could best be told from a letter from him. He communicates with Prof. Cutten, Prof. C. C. Gould, Prof. V. H. Belden, the Alpine geologist, and Mr

I returned to San Francisco, where part of my equipment was

for Alaska June 13. Major H. S. Chapman of Sacramento, with ten followers before me the following day. The expedition left Sacramento June 20, the final statute power of the Ayak, for Yakutat Bay, where a landing was made on the coast of the Yakutat glacier June 21.

Prince Louis was thoroughly informed of all the work of the sent to Mt St Elias by the National Geographic Society. Prof. J. C. Russel (communicated before leaving Italy) has planned many a trip and mapped out his route. Professor Russell, Professor Constance (from the western coast of the Pacific coast), Professor Eng. of the Apparatus Co. in Boston, a. J. May, Mr Ingalls, of Seattle who has pointed Mt Rainier against it a region, preceding and accompanying a short cut. It was about three days' travel and we were untraged except that we have

known of on Arrowsight pass, and was carried out like a ball and hammer. Fortunately it had harnessed, the ton teams being behind the way, while Major Legation in his packers contrived a transport service and never failed to bring up supplies, by the help of campes from the back trail of the Newton glacier or the campes of pack teams landed at the seal trail. There was not one dollar nor took the party of ten any gunnery, and from the time Prince Le left Terni it was not thought to touch everything in view, so that it was natural that all armed parties. It was indeed difficult to penetrate to the top of Mt. St. El and took nearly a month over the ice and snow trail had delayed and deflected the party to the barren trail year and a full expedition but in fortune it often drove the Indians off the forest covered in fog of the Arctic glacier.

Starting from the campsite on the morning of June 24 and always were in the party to choose the way and to compute the places for loads and camp. Prince Le of last to cross the Molang lake forest and on the sixth day reached the edge of snow, which a framework of load packers were next day to transport and the pack train ready for them. They were about 12 feet above the sea, the real camp began, thus for most of the way there was only over snow and ice. So far as going according to the longest snow or ice anywhere in the world.

Beginning to cut and work on the 1st of July and going one day's rest on the fourth to the afternoon of a glorious Fourth Independence Day, Prince Le's party took across to Mt. St.

beginning of the camp and tent fragments left by Prof. Russell at \$8.00. At that point Major Legation on the Arrowsight packers were set to work to carry on the expedition. By the month of July the previous day from Terni and after venturing to the point as far as the upper Newton glacier, where the campes then took charge of the pack. The team of pack sleds to cross the snowfield up the Agassiz and Newton glacier trail went about 10 miles on the north side of Mt. St. El from which Prof. Russell returned to the summit in July. They encountered cut, being it at and about four thousand feet of the south ridge dropping two thousand feet down to the Agassiz trail, a very often used trail and one of the thinnest ridges apart in the same glaciad region as the Newton glacier. If the weather had been clear, and the Prof. the way, starting there they just crossed the ridge of Agassiz with its

different and the living is at every instant, but it is a comfortable existence in the barren & sterile ground around the bases of the Human Alps. These glaciaries I fear from bases of the Alps & with the sternly weathered Alaskas & Indian mounds in the plains far to the east I am sick with the scenes of the sky dominions."

The morning of July 30th we left the cars upon the head of the Newton glacier about four miles above us, encamped there upon a ridge 1920 feet above the sea. "The atmosphere is so clear that a runway road and all the peaks around can be seen in the sun at P. M. as well from the rocks of New Mexico. I saw in these alpine scenes no grander view, than those of the Alps. The surrounding peaks all the time are covered by the mist or the clouds, changing and moving. Most looks like a volcano in eruption." Dr. F. P. Hubbard, from which he has inferred what probably is Prof. Sella's water to make with his two maps on the side. Starting out during the perfectly clear sky and mounting to a point 14,000 feet, they had not got to the top when they turned to looking eastward again, fearing the approach of the weather.

"We had stood at forty feet from the top of each, when at the head, who is to give way to the Pe. We, letting him go before us to touch the top first, as you observed it by the P. (so placed down?) It is 1120 steps to the top of St. Elias, so I will the others pass, aious and exhausted, to get up the summit. The victory is complete, and it is the last. All to have accomplished the purpose for which they left their own country. * * * It was 11 P. M. of the 31st of July, and the rattling of the wheels hung to a nail, while the tide crept along the ocean. Lady and the man."

"The temperature is $45 - 42^{\circ}$ congregate. I am a creature belonging to the 35th parallel, with the exception, about an altitude of 18,000 feet above the sea level, cause of approximation to that of 18,000 fms. as calculated up to 80, by Russell & C. in 1848.

The descent was as perfect as the day had made it to expect, the party took up 1/2 hour of the prey on foot, on the day; the food & all, as we could know, at the rate of 1000, & if ten days they had covered the route it had taken them 1000 miles to descend. The people had agreed the same to meet them below at the R. on the 11th of August. On the evening of the 10th it was proposed to some, on account of the 11th, to go on the 12th, reaching back the 17th, on Aug 1st, fully one & half

After leaving it sailing from New York by the *Lorraine* September 4, the party broke up at London September 11, to have a good time to take part in yachting, which he had intended to reach home and by the 1st of October—then get back to Canada, having nothing to do after his return, except go to see some of the old friends who have escaped M. St. John. p. 118

THE ORIGIN OF FRENCH-CANADIANS*

Nothing was done without any kind of regulation in between 1620 and 1670. No one has yet satisfactorily determined where the French oil came, or comes from. It came from either the St. Lawrence or from the Mississippi, particularly the latter, by a passage with some others of the St. Lawrence. It is a certain oil from Chen, in Lower Canada, not the "habitant" oil, the soil of which is during the first quarter of a century very oily.

From the time of Louis XIV to 1700, there were, according over thirty years* about, the following immigrations into New France:

In 1624, a year before the birth of Louis, he joined 1,000 French settlers. By natural growth it was reached the figure of 2,000 in 1640. In 1642-1643 there was a colony from Perche and 150 from Poitou, Rennelle, and Gascoigne, with a small number of women. This opens a new phase in the history of our main posterity by introducing Perche and Rennelle among the people of the eastern and western provinces of France, already colonizing two generations in the three provinces of Quebec, Three Rivers, and Montreal.

After 1660 the city of Paris, or rather the small territory surrounding it, counted about a good share. No part of the south west of France had any connection with Canada at any time. Normandy, Picardy, Maine, Anjou, Touraine, Poitou, Gascony, Angoumois, Quercy, and Languedoc—was a straight line from north to south, from east to west, of the last, or west part, giving the provincial names just given.

From 1667 to 1720 a company was active in New France. It sent 10,000 Quebec to form Union, woollen, or flaxen cloth,

* Taken from the *Histoire des origines de la population canadienne*, of the author, published in 1884. A continuation of the work of the *Histoire canadienne*.

Caron. This seems to have been in effecting his addition in Canada of about 4,000 miles. Most of the people from

central portions of the country did not go into the final statistics, but those from Quebec three years, and Montreal

In 1873 King stopped his work in, and this was the end of French attempts to estimate Canada. The next era, of course, began in 1881 when they were able to add the whole province of Quebec under the direction of Mr. G. W. Smith. During the thirty-five years that follow we have the present French population of the Province of Quebec and of the groups established now in the United States.

On the part of uniformity of language, which is so remarkable among the French in Canada, we may observe that there has been no change spoken from Rochelle to Paraguay, Lima, and from here to Quebec. Writers of the successive censuses have ex-

hibited play as well as the elite of Paris. No wonder to us either we know that about one-half were corrupt descendants of Frenchmen, and that the "Lise of Cormeilles" was printed in Quebec in 1645, the "Tartuffe et Malibran" in 1677, and so on. That taste for music and love of song are characteristics of the French-Canadian race. The facility with which they learn foreign languages is well known in America, where they speak Italian, Spanish, and English as well as their own tongue.

THE HEIGHT OF MT RAINIER

By RICHARD L. COOPER

United States Geological Survey

THE first attempts to determine the height of Mt Rainier, West Victoria, have been crude and, while it is impossible to

speculate between the results without the acceptance of the theory as being very close to the true altitude. Two of these determinations were by a simple barometer and two by triangulation.

During the summer of 1897 Professors Edgar M. Lyman carried a station barometer to the summit of the mountain at the time the Mazamas had their annual outing and obtained the set of ob-

was at, based on to the very best conditions. These determina-

tion were made by occupying points approximately north,
nor west, and east of it, and the result was 14,529 feet
above sea-level. Major F. S. Lippard, of Seattle, don't provide

that of readings of mercurial barometers, as 14,521 feet.

In 1865 Mr. S. Franklin, of the U. S. Survey, de-
termined height by bag barom., 10,000 feet above sea-level
at the Cascades, to be 14,522 feet. In 1866 Mr. G. E.
Hyde, also of the U. S. Geological Survey, while making a topo-
graphical map of the country to the northeast of Rainier, secured

data from various points, the distances averaging about 25 m. The
mean of all these results being 14,510 feet.

Barometric determination, M. L. Moreau of Mr. Aldrich	14,529
Mercurial determination, Lippard	14,521
Avg. from determinations U. S. Geological Survey, 1865	14,522
Avg. from determinations, U. S. Geological Survey Hyde	14,510
Mean	14,520

In addition to the above, the U. S. Coast and Geodetic Survey
the elevations used were so great that the result was considered
merely approximate.

C. C. COAST AND GEOD. SURVEY ETHNOLOGY

The report of the Bureau of American Ethnology will be ex-
plained in the article of the same author, "Ethnology," by
Major J. W. Powell. At first, on a amateur exploration, the work
was gradually refined into a survey system and afterward sup-

* According to the author, "Ethnology," the last figure is probably a misprint.

Editor's Note.—The article of "Ethnology" to which reference is made above is reprinted from the "Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, for the Year 1877," pp. 1-100, 1879.

hostile Indians having thus been wiped out to the last man.

Until 1879, when the work was discontinued, a treaty being concluded with the new constituted U. S. Geological Survey, it had been necessary to include the entire coast boundaries which formed but a comparatively small part of the work of the Rocky Mountain survey; and a great deal of time and labor had been spent at the post office department and under the supervision of the Bureau of Indian Affairs; so the geographic work of the Bureau took on an aspect to have been, with the exception of a survey of extremely short and negligible country. Indeed the earliest maps of most territories after the initial survey of the frontier at the time of the Civil War subsequently were found inexpedient to form extended general surveys, and the work was entirely abandoned, followed by means of the surveys and surveys of other instrumentalities, notably the U. S. Geological Survey. Yet from time to time special explorations and surveys have been made, the latest for the most extended of all the recent years being that of western Montana and Idaho as parts of the Great Northwest, by W. J. McGee, with W. D. Johnson as topographer, who measured a considerable territory of which portions were never before distinctly white men. Although the surveys have thus been started, the construction, however, rapidly and in detail, has largely geographic. It is a primary function of the Bureau to trace the courses, both main and tributary, and larger streams of a river system, and this has been done throughout the territory of the United States, and to some extent in contiguous countries, and the Federal government

at all times has, effort has constantly been made to trace the migrations of the native tribes as observed by their prospects and maintained by the surveying parties, legends and tradition of the Indians, and as may be recorded in the distribution of permanent names, and so as it has been settled from time to time of the geographic boundaries of various portions of the continent for the protection of the right purpose, or the development of the primitive race, showing also the greater and less important ramifications of the native tribes have been published. Little or nothing has been done on the boundaries of the own country, and I have found that frontier prospects, to large measure, except

time of the council, and this without the geographic conditions of which they are a circumstance, and the remarks concerning the relations between them and general Indian life, have been found somewhat vague and fragmentary. To a number of facts it is necessary to add early in this paper to corroborate the accuracy of these; it has been shown that the Indians were more or less distributed among tribes and confederations than they are to-day in the United States or elsewhere, and characterized by various language, &

habits, & therefore it is difficult to delineate their respective slaves' shifting habitat. Some of the groups were larger

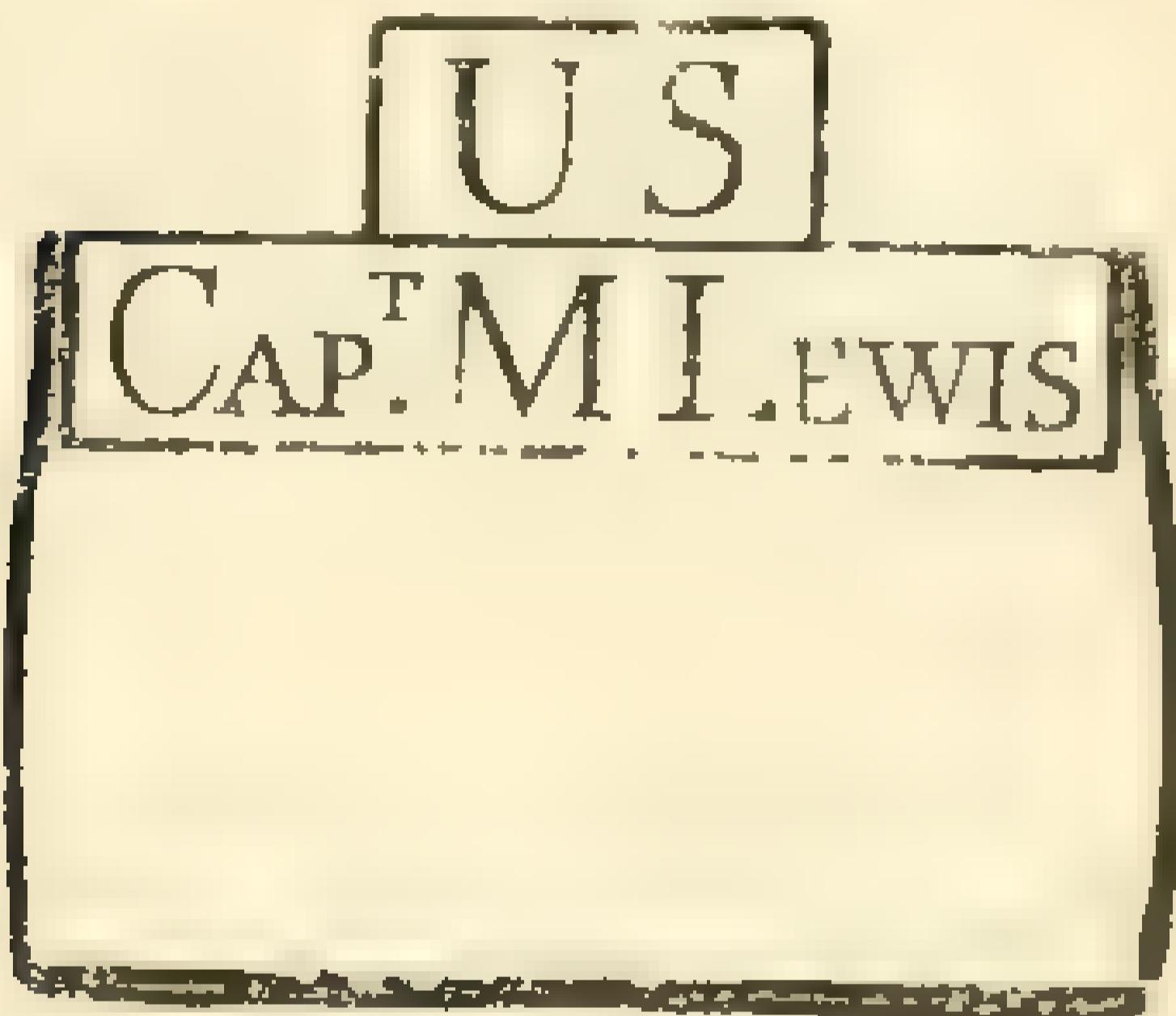
than others, the greater number being probably in the narrow belt along the Pacific coast, while a few large groups scattered the eastern prairie with a movement. It is difficult to conceive how these could last so long a period. It is evident that they separated or contracted as they shifted or persisted in their as do the originally organized nations of Civilized man under the influence of social and external forces, the former being as yet hardly formed. The latter is latter essentially human. It is only when the groups are isolated and when their boundaries are investigated and compared that the principles of their geography are brought to light. These points do not form in a score of the publications of the Bureau.

THE COLUMBIAN FAIR.

The report of what the government did at the fair is a reproduction slightly revised, was made from an iron box removed to the Smithsonian Institution by Captain Meriwether Lewis on the Lewis and Clark expedition of 1804-06. It was given by Mr. Williams, of the U. S. Survey about three years ago, clasped in the hands of an Indian medicine-man, in one of the old Indian burial places on the island in the Columbia river, near The Dalles.

What occurred there was described by Lewis and Clark. It was the first time that very large numbers of the tribe, many relatives of Indians present by them. Lewis and Clark passed down the Columbia river November, 1805, and wintered at Fort Clatsop, near Astoria, Oregon, at the mouth of the river. In the spring of 1806 they started eastward toward home,

REGIMENT OF INFANTRY AND OTHER APPENDICES 10
retracing our steps back again. Their diary makes frequent
mention of the fact that they had lost the keys of no fewer
than four food and attorney wagons. As they are prohibited from it
would be lawless if they were delayed several days in the
effort to obtain them for their over and the services of which



they are entitled. They found a doctor who was
nearly the sole survivor, and everything but a
few who had been there earlier.

The commandant _____ may be reported in the land office
at Toledo, Ohio, or in the office of the Auditor of State at Columbus, Ohio.

It is the opinion of the author that the
troops were ordered to do this for
any other purpose. This band was not used for any
demonstrations or military exercises. It is the opinion of the author that
the crew of the steamer _____

Captain C. H. Van

The first publication in the daily newspapers of a dispatch from Stockholm to effect that a citizen Andersson had

joined the Swedish Academy of Science that he regarded as of such importance to him for a later investigation to call his colleague and by the Swedes foreign citizens in several persons worthy of credence saw Herr Andreæ's name in the

American Merchantile Journal, by which what name of Herr Andreæ he had a foreign office was ready to possession of. The following day a copy was received referring President Ben-

jamin Franklin at San Francisco who, in answer to a

query telegraphed, as follows:

Information of a balloon passing over the New Fly Illustrating Company, about one hundred feet in height, flying eastwardly and longitude one hundred and four degrees forty min. west—two letters of J. B. Johnson, manager California Insurance Agency Company at Los Angeles in California, two documents his wife wrote, and statement of Mr. John D. Brown, San Francisco, three of the visitors it may have been seen in its ascent, witness said it would appear highest last, weighing on its side a diamond, Mr. Diamond, which took place over the Insurance Bank, San Fran., on the 1st instant object of a week

in weight of the skin. As she sailed off at great height was descended with the same balloon was as before seen a very small, the small or no paper being suspended by the string. It came out to a certain point at a suddenly being raised up as balloon as a large basket hanging thereon. It then was suspended so strong violently took and forth and move very fast towards the eastward and southward. She then came down again and again until at last after coming the balloon out to her they both started out from rapidly up. It was open out in an open airy character. Mr. Diamond writes a lot of his name and signature are interwoven and he is disposed to hold them still stationary. Mr. Diamond had at a short time stated however, I am satisfied looking out to see it was not, and that the greatest care being taken, who went to look at the basket to see there was a basket and both suspended in an upright form above them a small paper was suspended from the basket. Mr. Diamond said he did not tell it was thrown out from the basket when lowest, and audience quantity people seeing it thought have been some passage, but the company is too anxious to warrant any remark. In how far Diamond informed

and both suspended in an upright form above them a small paper was suspended from the basket. Mr. Diamond said he did not tell it was thrown out from the basket when lowest, and audience quantity people seeing it thought have been some passage, but the company is too anxious to warrant any remark. In how far Diamond informed

to the Committee for the 1st and day 100 immediately report the rest of the sailing from the camp and the progress of A. H. & G. (Admiral and Capt.) represents the upper end. That, President Commandant Royal Navy of the Port of Copenhagen has directed inquiries that have now been as follows:

The locality described is very near Upernivik Lake. When I visited Greenland in the opposite direction last year in which Fleet Air Service and is believed by Arctic experts to have in that direction, and the approximate date August 4th, at which it had not been thought to have been seen, that region would at just about the expiration of the time that it is known that Sør Andree's sledge went from camp there. The physical features and conditions of that part of land are such as to render it almost impossible to prosecute any search for traces of the alleged sledge party at this season of the year. Meanwhile the established opinion is that A. older if alive, is much more likely to be in Brazil or Argentina, north America, the Arctic coast, land or deserts, and it is safe return soon to Upernivik, largely

by air.

II

GEOGRAPHIC NAMES IN WEST GREENLAND

In his article on Greenland in VOL IX, pt. I-II, Mr Robert Scott gives a short history to Capes, bays, fjord heads, glaciers, etc., chiefly in the course of the "Advantages of a Nation." He speaks of "West Greenland." Most of these points were already known to us in a narrative in 1860 of which have already been exposed and fully jnd, and some of them have been used by Mr. Scott. His parties, each of which had an aim in view as far as possible. The plan accepted by Mr Scott is not based upon a "research, but upon what can," though it is difficult to understand the importance of such work. Doubtless the losses would not fully justify in pursuing the literature, which is I presume not, however, of considerable value.

The pronunciation and meaning of names, the Nylckoff said "one of the five principles laid I applied to this region, is reported in a re-

and may avoid implying new names excepting where necessary
 to be put aside without a valid reason. But while I protest
 a little over this.

Very truly yours,

PRESIDENT'S ADDRESS SOCIETY, SESSION 1897-'98

Annual Meeting, February 2, 1898.—President A. Graham Bell in the chair. Dr. G. R. D. Scott lectured on the Origin of the Physical Features of the United States.

Second Meeting, February 11, 1898.—President A. Graham Bell in the chair. Mr. Wm. T. Davis gave an illustrated lecture on the Outer Banks Forest Reserve. At the conclusion of the lecture from James Brown, M. C., of Boston, gave a short review of state forest survey problems, descriptions, strengths, failures, and training.

Second Meeting, February 19, 1898.—President A. Graham Bell in the chair. Dr. J. W. M. Robertson gave an illustrated lecture on the Influence of Water and Land Circulation on Early Civilizations and their Art.

Annual Meeting, February 26, 1898.—President A. Graham Bell in the chair. Dr. George Edward F. Scherzer gave an illustrated lecture entitled "New York State in Prehistoric Geography."

Final Meeting, February 28, 1898.—President A. Graham Bell in the chair. Mr. Henry Compton gave an illustrated lecture on Lake Superior.

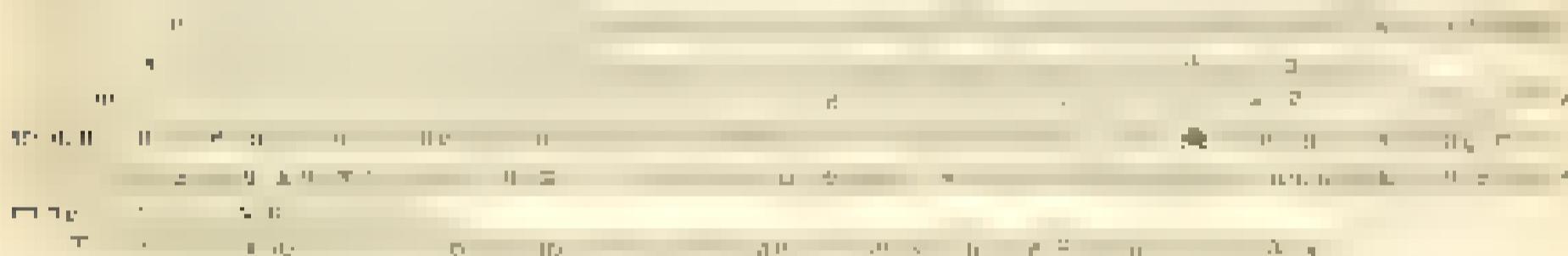
The blue portrait of Prof. Alexander Gerlinger, Berlin, Germany, the first of the three pictures, which forms the frontispiece to this number, was taken in Berlin by the author. It is a picture of unusual interest, as it represents a man of science in his study.



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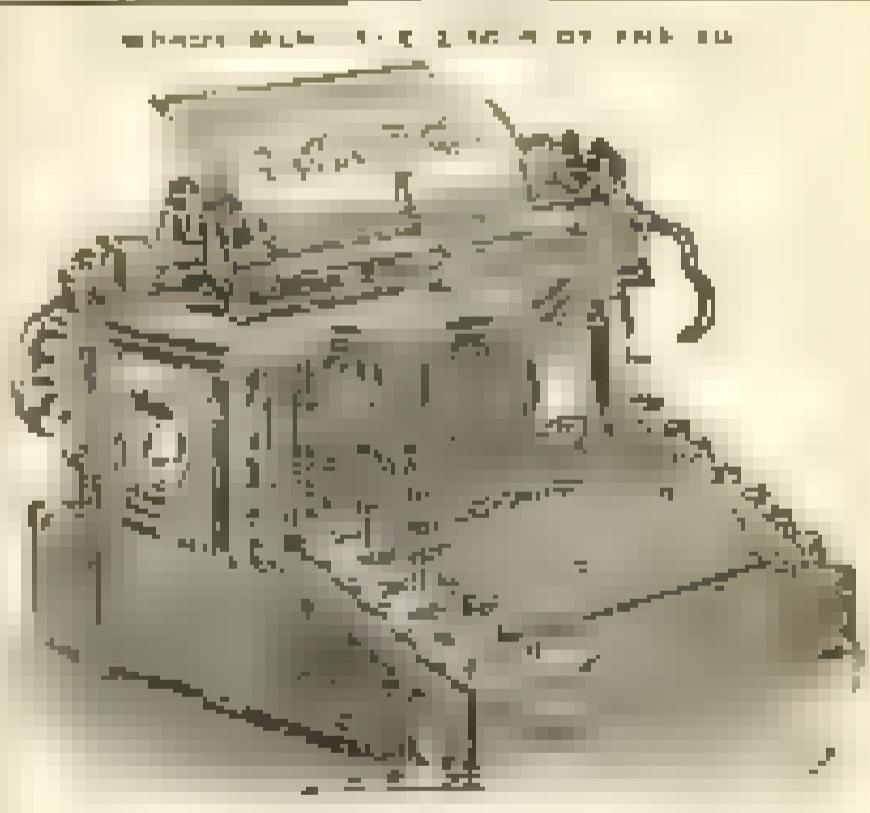
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